

Materials: (you provide)

- Scissors (to cut out the fan template)
- Hole Punch (to punch out pinhole)
- Two Pieces of Thick Stock Paper
- Printer
- Glue
- Stapler
- Stick (approx. 7" in height)
- Small Thermometer (height 6" or smaller)
- Black Permanent Marker

Construction:

- Print the handheld fan template on thick stock paper (FRONT and BACK)
- Cut out the fans
- Place the stick in between the stock paper
- Glue the fan on the stick
- Staple the stick and paper together for more support
- Punch a hole for the pinhole (red dot located in the middle of the fan)

To Do: (during the eclipse)

- Use the pinhole in this fan to project an image of the sun on the ground.
- Turn so the sun is to your back, and hold the fan 3-4 feet above the ground. (The small hole will make an image of the sun on the ground. We found this provided the strongest and clearest pinhole projection of a partial eclipse.)

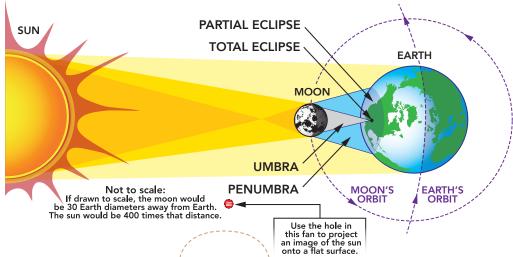
More Science Fun: (temperature gauging)

- On the BACK of the stick, glue the thermometer onto the stick
- On the FRONT of the stick, use the permanent marker to draw three vertical lines (top to bottom) and label the lines: 1) Start ______
 Max _____ and 3) End
- Using the thermometer on the back of the stick, read the temperature and record it on the appropriate line on the FRONT of the stick.
- Enjoy the partial phases of the eclipse!

FRONT

WARNING: Never look directly at the sun without proper eye protection. You can <u>seriously</u> injure your eyes.





HOW TO WATCH

Keep your glasses on at all times, except during totality. With your back toward the sun, hold this fan pinhole projector 2 to 3 feet above the ground.

More on eclipses

http://eclipse2017.nasa.gov http://www.nasa.gov/eclipse

HOW LONG WILL IT LAST

The total eclipse, when the sun is completely blocked by the moon, will last up to 2 minutes and 40 seconds, depending on your location.

More on safe viewing of eclipses

http://eclipse2017.nasa.gov/safety http://go.nasa.gov/2evRZBG

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WARNING:

NEVER look directly at the sun without proper eye protection. NEVER look directly at the sun or through optical devices such as pinhole projectors, binoculars or telescopes! You can <u>seriously</u> injure your eyes.

BACK